CLAIMS

1. A data transfer device for writing data to and reading data from a disk drive system through a plurality of ports of the data transfer device, the data transfer device comprising:

a first buffer for serially receiving, from a host system, control portions of data read transfers and data write transfers;

a second buffer for serially receiving, from the host system, data portions of data write transfers received by the first buffer; and

N temporary storage devices coupled to the first buffer and the second buffer, the N temporary storage devices for parallelly receiving and temporarily storing consecutive control portions of the data read transfers and data write transfers from the first buffer;

wherein up to N of the data read transfers and data write transfers are transferred to the disk drive system through the plurality of ports simultaneously.

2. The data transfer device of claim 1 wherein the first and second buffers are FIFO buffers.

3. The data transfer device of claim 2 wherein, after each of the N temporary storage devices transfers a data read transfer or data write transfer and becomes available, a subsequent one of a data read transfer and data write transfer is transferred to each of the available N temporary storage devices from the first buffer.

4. A data transfer device for writing data to and reading data from a disk drive system, the data transfer device comprising:

a first buffer for serially receiving, from a host system, control portions of data transfers;

a second buffer for serially receiving, from the host system, data portions of data transfers received by the first buffer; and

N data transfer processing stations, coupled to the first buffer, the N data transfer processing stations for parallelly receiving and processing consecutive control portions of the data transfers from the first buffer;

wherein up to N of the data transfer transfers are simultaneously processed by the data transfer processing stations.

5. The data transfer device of claim 4 wherein the first and second buffers are FIFO buffers.

6. The data transfer device of claim 5 wherein, after each of the N temporary storage devices transfers a data transfer and becomes available, a subsequent one of a data transfer is transferred to each of the available N temporary storage devices from the first buffer.

7. The data transfer device of claim 4 wherein data portions of data transfers queued in the second buffer are shifted out of the second buffer and written to a disk drive of the disk drive system upon its associated control portion being processed by one of the N data transfer processing stations.

8. The data transfer device of claim 4 wherein data portions of data transfers queued in the second buffer are shifted from the second buffer to the data transfer processing station processing its associated control portion and then written to a disk drive of the disk drive system.

9. A method of transferring data in a disk drive system comprising:

A. receiving data transfers from a host system;

B. queuing control portions of the data transfers in a first buffer;

C. queuing data portions of the data transfers in a second buffer;

D. shifting each of N control portions of the data transfers from the first buffer into one of N parallel data transfer stations;

E. processing the N control portions in the N parallel data transfer stations simultaneously; and

F. shifting subsequent control portions of data transfers queued in the first buffer to ones of the N parallel data transfer stations that have completed a transfer of a previously stored control portion.

10. A data transfer device comprising:

means for receiving data transfers from a host system;

means for queuing control portions of the data transfers in a first buffer;

means for queuing data portions of the data transfers in a second buffer;

means for shifting each of N control portions of the data transfers from the first buffer into one of N parallel data transfer stations;

means for processing the N control portions in the N parallel data transfer stations simultaneously; and

means for shifting subsequent control portions of data transfers queued in the first buffer to ones of the N parallel data transfer stations that have completed a transfer of a previously stored control portion.